Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-14. (canceled)

15. (previously presented) A method of analyzing interactions between target nucleic acid and an oligonucleotide probe comprising the steps of:

(a) synthesizing an oligonucleotide analogue array comprising a plurality of oligonucleotide analogue probes having different sequences and comprising peptide nucleotide analogues, wherein said oligonucleotide analogue probes are coupled to a solid substrate at known locations, said solid substrate having a surface;

(b) exposing said oligonucleotide analogue array to a plurality of oligonucleotide targets under hybridization conditions such that said plurality of oligonucleotide analogue probes bind to complementary target nucleic acids at uniform hybridization conditions; and

(c) determining whether an oligonucleotide analogue probe of said oligonucleotide analogue array binds to said target nucleic acid.

16. (canceled)

17. (previously presented) The method of claim 15, wherein said target nucleic acid is genomic DNA.

18. (previously presented) The method of claim 15, wherein said target nucleic acid is amplified prior to said exposing.

19. (original) The method of claim 15, wherein said plurality of oligonucleotide analogue probes is synthesized on said solid support by light-directed synthesis.

20. (original) The method of claim 15, wherein said plurality of said oligonucleotide analogue probes is synthesized on said solid support by causing

oligonucleotide analogue synthetic reagents to flow over known locations of said solid support.

21. (original) The method of claim 15, wherein said solid substrate is selected from the group consisting of beads, slides, and chips.

22. (original) The method of claim 15, wherein said solid substrate is comprised of materials selected from the group consisting of silica, polymers, and glass.

23. (original) The method of claim 15, wherein the oligonucleotide analogue probes of said array are synthesized using photoremovable protecting groups.

24. (original) The method of claim 15, wherein at least one of said oligonucleotide analogue probes is synthesized from phosphoramidite reagents.

25. (previously presented) A method of detecting a target nucleic acid comprising:

enzymatically copying a target nucleic acid using at least one nucleotide analogue sequence comprising peptide nucleotide analogues, thereby producing multiple oligonucleotide analogue targets;

selecting said oligonucleotide analogue targets such that said oligonucleotide analogue targets bind to the complementary oligonucleotide probes coupled to a solid surface at known locations of an array at uniform hybridization conditions;

hybridizing the oligonucleotide analogue targets to complementary oligonucleotide probes; and

detecting whether at least one of said oligonucleotide analogue targets binds to said complementary oligonucleotide probe.

26. (canceled)

27. (original) The method of claim 25, wherein the oligonucleotide probe array comprises at least one oligonucleotide analogue probe which is complementary to at least one of said oligonucleotide analogue targets.

28. (previously presented) A method of making an array of oligonucleotide probes comprising:

providing a plurality of oligonucleotide analogue probes having at least one oligonucleotide analogue, said oligonucleotide analogue probes having different sequences at known locations on an array and comprising peptide nucleotide analogues, and

selecting the oligonucleotide analogue probes to hybridize with complementary target nucleic acid under hybridization conditions such that said oligonucleotide analogue probes bind to complementary target nucleic acids at uniform hybridization conditions.

29. (canceled)

30. (original) The method of claim 28 further comprising:

incorporating a 5-propynyluracil base into the oligonucleotide analogue probes of the array.

31. (canceled)

32. (original) The method of claim 28 further comprising:

providing said plurality of oligonucleotide analogue probes in an array with at least 1000 other oligonucleotide analogue probes.

33-34. (canceled)

35. (previously presented) A method of analyzing interactions between target nucleic acids and oligonucleotide probes comprising:

providing on a solid substrate an oligonucleotide analogue array comprising a plurality of oligonucleotide analogue probes having different sequences and comprising peptide nucleotide analogues;

exposing said oligonucleotide analogue probe array to a plurality of target nucleic acids under conditions effective to permit the plurality of oligonucleotide analogue

probes to hybridize to complementary target nucleic acids under uniform hybridization conditions; and

determining whether an oligonucleotide analogue probe of said oligonucleotide probe array hybridizes to at least one of the target nucleic acids.

36. (previously presented) A method of detecting a target nucleic acid comprising:

enzymatically copying a target nucleic acid using at least one nucleotide analogue comprising peptide nucleotide analogues, thereby producing multiple oligonucleotide analogue targets;

providing on a solid substrate an oligonucleotide array comprising a plurality of oligonucleotide probes selected to hybridize to complementary oligonucleotide analogue targets under uniform hybridization conditions;

exposing the oligonucleotide analogue targets to the oligonucleotide array under conditions effective to permit the oligonucleotide probes to hybridize to complementary oligonucleotide analogue targets; and

detecting whether at least one of the oligonucleotide analogue targets hybridizes to a complementary oligonucleotide probe.

37. (previously presented) A method of making an array of oligonucleotide probes comprising;

providing, on an array, a plurality of oligonucleotide analogue probes having at least one oligonucleotide analogue and different sequences, wherein the oligonucleotide analogue probes comprise peptide nucleotide analogues and are selected to hybridize to complementary target nucleic acids under uniform hybridization conditions.